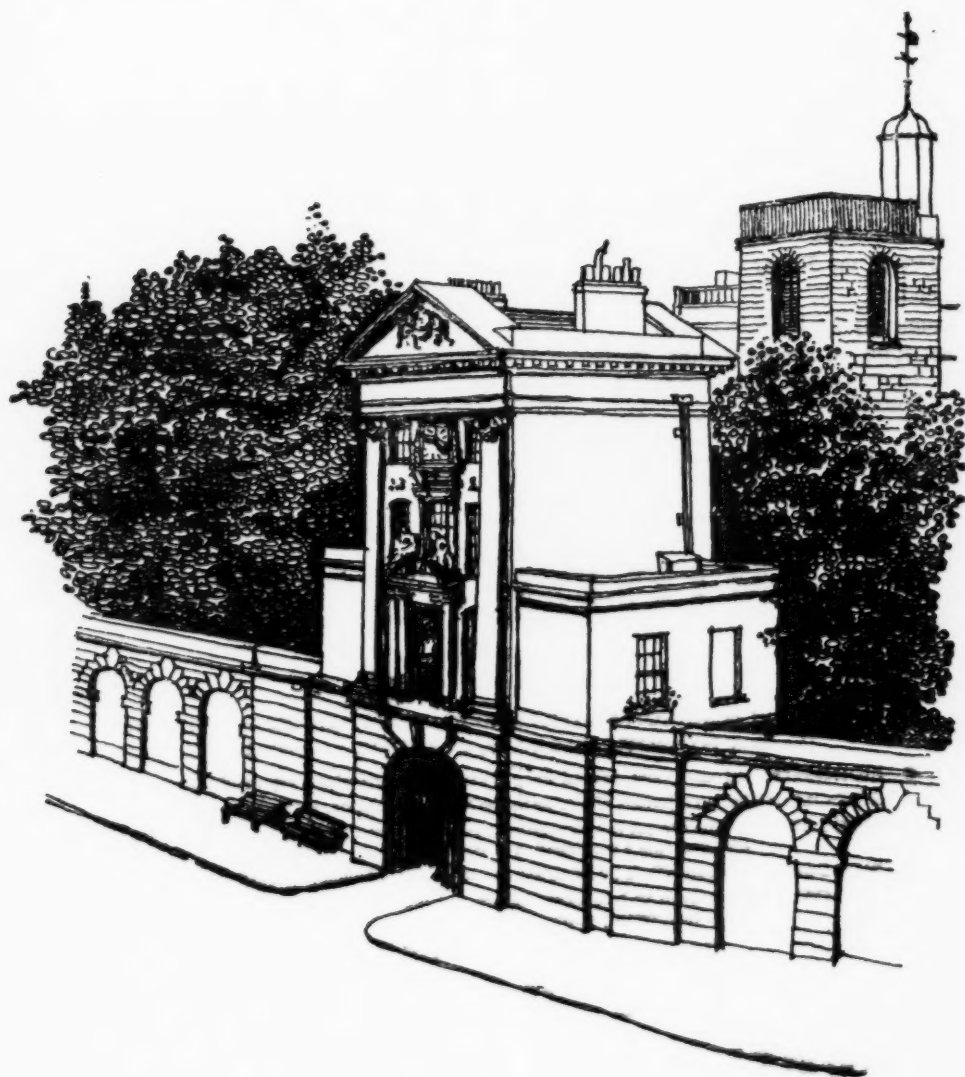


# ST. BARTHOLOMEW'S HOSPITAL JOURNAL



VOL. LXI

NOVEMBER 1957

No 11

## ST. BARTHOLOMEW'S HOSPITAL JOURNAL

Editor : J. K. CHONG.

Assistant Editor : M. J. L. PATTERSON.

Sports Editor : R. J. MITCHELL.

Charterhouse Representative :

Manager : M. I. D. CAWLEY.

Assistant Manager : J. CHAPMAN.

Women's Representative : MISS J. CHAMBERS.

MISS A. M. MACDONALD.

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November, 1957

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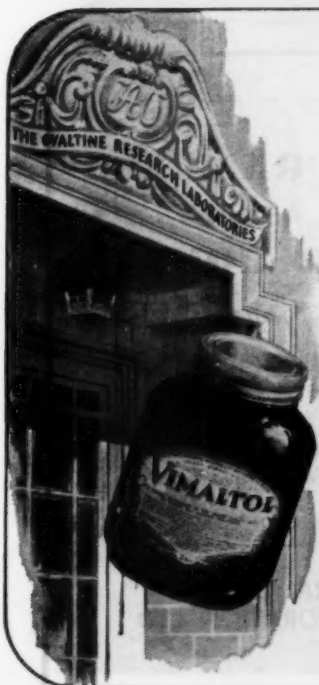
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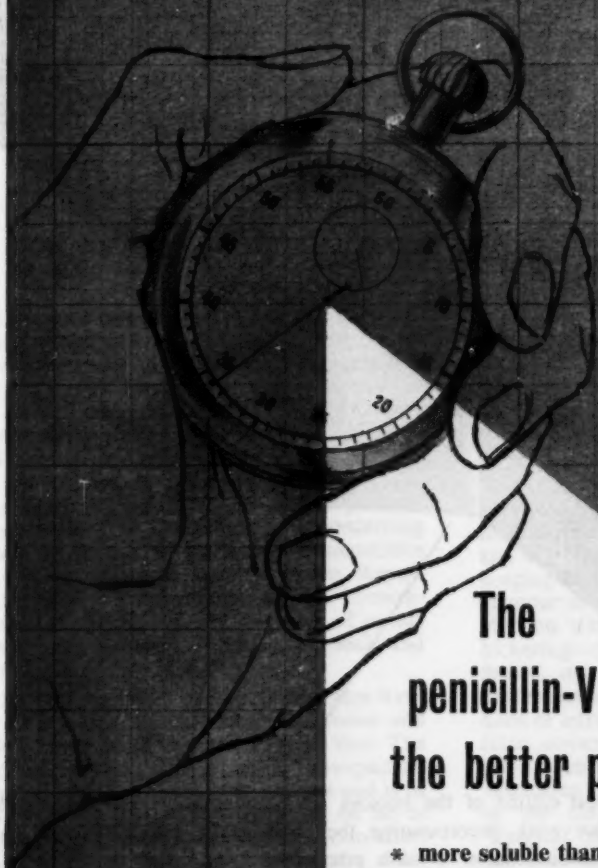
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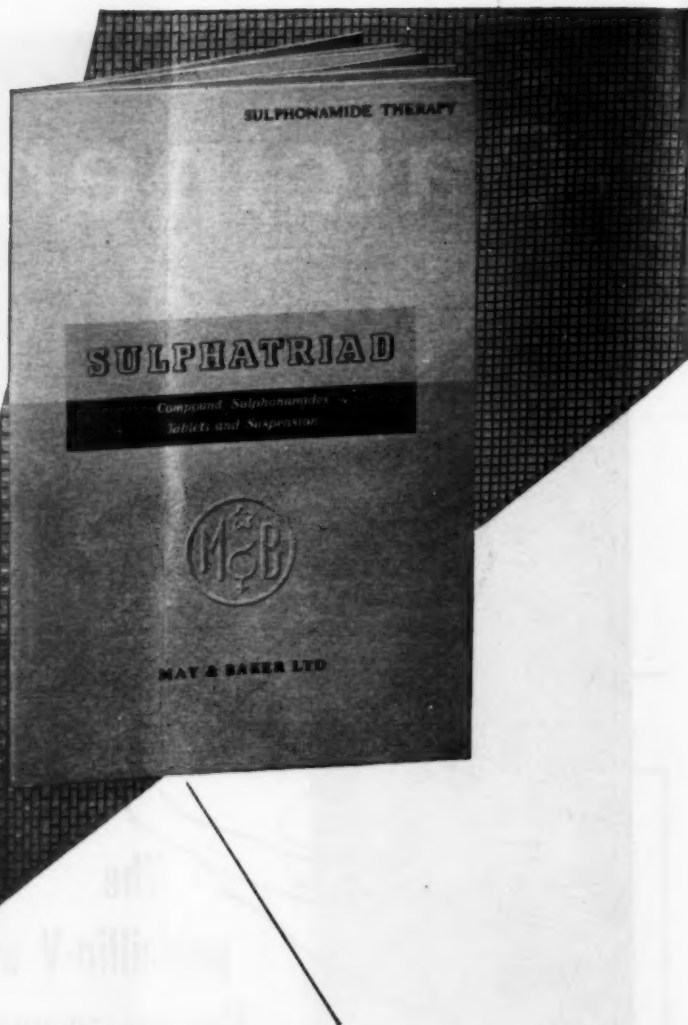
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# ST. BARTHOLOMEW'S HOSPITAL JOURNAL

Vol. LXI

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## EDITORIAL

THAT INSTINCTS exist in the various forms of life is indisputable, and in the human the instinct to pair up and to mate presents one large facet of life which often confronts us as men of medical science. In the anomalous forms of homosexuality and perversion medical opinion is often sought by courts of law. In the extreme forms of rapacity and sexual mania again medical evidence can produce conviction. The *Journal* is not concerning itself with either of these two abnormalities — readers will find the Wolfenden Report more informative. Rather are we immediately concerned with the sequence of events which result after a couple, normal and healthy, have decided to pair up.

Friends, relatives and total strangers have to be informed of their reckless decision and what better method can be found than The Announcement in the more 'U' newspapers. The amenity has far-reaching effects and is of good value; everything seems to be so in these days of the inflated Pound. Soon after, congratulatory letters pour in by the shoal from close friends and casual acquaintances alike. Even total strangers can scarcely wait to wring the hands of the newly betrothed.

Alas, this blissful state of '*la vie en rose*' can remain at best a temporary illusion for other prying eyes have also read the news. The hapless couple is overwhelmed by a deluge of correspondence (with prepaid business reply envelopes enclosed) from firms purporting to specialise in future financial

security or familial well-being. These often have the contrary effect of deflating the hopes of those with toes poised gingerly on the aisle. Enter realization that married life is not a bed of roses. The honeymoon seems to have ended even before it has begun.

They marry nevertheless. Brave souls. The starry-eyed look soon tarnishes before the corroding effect produced by the pace of modern life. Man and wife go out to work and a nominal household is kept. House-keeping turns out to be devoid of any glamour or resemblance to Mrs. Dale's. They plod on with their miserable existence with bickerings over whose turn it is to wash the dishes, over unsettled bills, frivolities and extravagances, the new hat. In such conditions of adversity and unpleasantness, Nature often comes to the rescue with a soothing salve. An Ascheim-Zondek confirms their suspicions. Should they have paid more heed to the disgusting pamphlets from those "Surgical Appliances" manufacturers who had read about their engagement?

It is too late. The family arrives. Yet another announcement and yet another bumper mailbag. The specialists in future financial security return fresh to the attack, determined to have the dotted line signed by the new father. Thinking about the future and all that. Other bodies of people also join in the fray, advising against the practices carried out on the "poor defenceless child" who is said to have already all the defences required. Such practices as active immuniza-

tion are all "fraught with danger." Vital statistics of postvaccinal-encephalitis and other complications following active immunization are impressively provided. The "Surgical Appliances" also return in force. Under the guise of aids to "Family Planning" their products are again brazenly touted, providing reading matter of sorts for the mother during her post-natal fortnight. The ignoble aim seems to be the prevention of overpopulation of these British isles, an

effect produced more efficiently by organized emigration.

Such intrusions on one's privacy have been accepted as part and parcel of the intimate nature of procreation, wrongly so, but the fault lies entirely with us. They could have been prevented if the couple had not married or if The Announcement had not been made but then to take a mate and to be curious are also traits of the human as they are of the lower forms of life.

### "Asian 'flu'"

*Our correspondent writes:*

As far back as nine months ago, Asian 'flu became a much-dreaded household word. With wide publicity having been given to this scourge by the national press, an outbreak of larger proportions possibly to rival that of the 1918 epidemic had also been presaged by many.

The disease has come to Bart's where, assuming endemic form, it has threatened to throw out of gear the whole machinery for the smooth functioning of a large hospital. It has been thought that the virus was introduced to the hospital by children admitted routinely, an idea alien to some. The question of culpability must remain at best an academic one and it is not proposed to pinpoint the culprits in these lines. Suffice it to say however, the nurses were the first to go down. Cases reporting to Dr. Coulson in Sick Rooms began with a slow trickle which soon increased in snowball fashion so that the beds in the Sick Rooms in the Nurses' Home, in the Surgery Ward and in Charterhouse Square were filled to overflowing.

Thanks to Mr. Beatty, emergency bed accommodation was provided when Harley ward was given up for the nursing of nurses. As usual, the enterprising nature of Bart's men was much in evidence. A gallant, who had best remain anonymous, offered his services to the Health Officer in the burdensome task of clerking scores of nurses; his gallantry was regrettably declined for reasons unknown. A more naïve student commented upon the puzzling phenomenon of such large numbers of young women admitted for "gynaecological reasons."

When the inmates of Charterhouse Square

also fell before the scythe of the virus they displaced the nurses from Harley ward. Kenton ward was kindly given up by Dr. A. W. Franklin for the accommodation of these displaced persons. The transfer took place one dark autumnal evening and such was the efficiency of Bart's nursing that within 25 minutes all the patients had been comfortably settled, their TPR charts completed—a masterpiece of organization enough to delight the heart of any matron.

In most of the cases, swinging temperatures have not been uncommon, with temperatures falling from 104°F to 96°F within 24 hours and rising slightly again. Symptomatically, those afflicted have suffered with only such petty nuisances as headaches, sinusitis, general debility and lethargy. The average duration of "warding" has been about three days. Several of the male patients in the gynaecological ward of Harley did not seem at all nonplussed but quite at home, apparently none the worse for their incapacity in a female ward, noisily preoccupied with their own peculiar but effective form of self-cure. The game of "Battleships" was their response to the earnest counsel "Physician, Heal Thyself."

The fact that routine admissions to the Hospital have been curtailed only by some extent and that no complete stoppage of admissions has been found necessary as has been the case at one other teaching hospital in London must bear eloquent testimonial to the more robust constitution of Bart's nurses.

\* \* \*

### Back Home at Last

Since last June, deposed from his warren by builders who had descended to carry out renovations, Mr. Garwood was forced to

carry out his manifold duties above ground. Gentlemen at Bart's were "de-convenienced." For want of a cloakroom white coats, clean and dirty, were dumped unceremoniously in such diverse places as the Abernethian Rooms and the Library—a sight which would have caused many an old Bart's man to lament the passing of a more orderly and dignified era.

On October 22, a mysterious notice board propped against the oak doors leading down to the Cloakroom proclaimed a "Grand Re-opening." "The March of the Toreadors" and a finale of "that old favourite 'Back Home At Last'" were to be played.

The great day dawned but expectations were not fulfilled. The return of Bart's men underground was uneventful and disappointingly unobtrusive. This was short-lived. Adapted to an existence above ground some rabbits rebelled against this return to subterranean life. A few of the 300 steel lockers were turned about and the cocks of the flushing urinals pulled out with gleeful malice.

The exhortation, '*Whatsoever thy hand findeth to do, do it with thy might*', to be seen above the door leading down to the Cloakroom must have been followed by those planning the re-decoration for no half measures were taken. Hot air blowers, thermostats, air extractors over each cubicle, fluorescent strip lighting, a non-slip asphalt composition floor, cupboards for club equipment are some of the improvements incorporated for which a period of 18 weeks' waiting does not seem unjustifiably long.

\* \* \*

### The Boat Club

In October the Boat Club struggled from its summer chrysalis to find winter bearing down rapidly. All thoughts are of course focussed on the United Hospitals Regatta, which this year is to be held on Wednesday, 27th November, before, we hope, the full rigours of winter descend. It is pleasant to be able to report that the Club is flourishing, as a visit to Chiswick on any Wednesday or Saturday will reveal. Now is the time of year when enthusiastic beginners churn the waters of the static tank and coaches feverishly wave their arms and stifle evil words, wondering whether their protégés will ever master the basic arts. Determination will inevitably win through and an eight

formed from these worthy gentlemen will race a similar crew from Guy's. Incidentally, this race has been held in various forms since 1848 and is undoubtedly the oldest form of inter-Hospital racing.

Four IVs and a Junior VIII will be competing in the United Hospitals Regatta together with two scullers and a double sculler. The most experienced oar representing the Hospital will be C. C. H. Dale, whose presence in the rugger IV may bring frowns to the brows of our opponents but will do much to reinstitute the old tradition that this was Bart's race.

One of the mysteries of Bart's rowing is the recent absence of Oxford gentlemen. Indeed, any Bart's oarsman might be forgiven should he suspect that Oxford rowing is a myth nurtured by a small band of Dons who each year employ nine athletic men to pace Cambridge from Putney to Mortlake, or that the impressive arrays of lines and crosses which periodically appear in the better newspapers are purely the products of an imaginative mind working deep in the bowels of Blackfriars Lane. We can only wish that the matter will soon be remedied.

On the day of the Fresher's Tea Mr. Thornton produced from the library a splendid flag. This had come into his possession during the War, when it had been left to the Club in the will of an old member. The cover bears the inscription 1848 and this may prove to be the original flag of the Club, which was founded in 1844. It is hoped that at a later date someone with the energy and ability will investigate this matter further and publish his findings.

The perennial question of a rowing tank at Charterhouse Square has been revived this year. Our Captain has returned from "The States" with some novel ideas and is at present in consultation with a fluid dynamics expert with a view to producing an efficient but simple design. Such an arrangement would lead to a marked advance in the standard and fitness of our crews and now that the future development of the Medical School is more clearly defined it is hoped that a permanent site will be found.

The Club welcomes all its members newly arrived from schools and other places and couples with a plea for punctuality a sincere wish that their rowing days at Bart's will provide them with much pleasure and many happy memories and experiences, to be vastly exaggerated in times to come.

### Glass and Wine

Some fifty members of the Student Body drawn from the various clubs and societies of the Hospital had the pleasure of receiving hospitality from Dr. and the Hon. Mrs. E. R. Cullinan who were At Home on October 24. In an elegant drawing room Mine Host made everyone feel at home. Against one wall stood a handsome cabinet bearing the cream of Dr. Cullinan's varied collection of priceless antique glass. Rapt looks were shown by several of those present as Dr. Cullinan expounded on the individual histories of his collection.

Riesling was served chilled to the correct temperature, not overly cold to numb the palate not overly warm to detract from its bouquet. No glasses were twiddled hopefully for they were filled as soon as they were emptied. To Dr. and the Hon. Mrs. Cullinan must go the thanks of those fortunate enough to have been invited for a convivially delightful evening.

\* \* \*

### University of Cambridge

M.D.—C. B. Prowse.

Dr. A. N. Griffith has been elected to the E. G. Fearnside's Scholarship for 1957.

Dr. M. M. Bull, University Lecturer in Anatomy, has been elected to an official Fellowship at Queen's College.

### Royal College of Obstetricians and Gynaecologists

Prof. Andrew Moynihan Claye has been appointed President of the College.

### University of London

D.Sc. (Physiology)—D. A. McDonald.

### Junior Scholarships (Chemistry, Physics and and Biology)

Awarded jointly to G. Ga'rdos, R. G. Miller, E. Knight.

### Change of Address

Dr. K. G. Mellish-Oxley—to High Winds, Barking Tye, Nr. Needham Market, Suffolk.

### Cambridge Graduates Club

The Cambridge Graduates Club of St. Bartholomew's Hospital, in its 82nd year, held its eighth sherry party on 25th October, 1957. Influenza failed to prevent a goodly muster in the Library.

Sir Henry Dale, President of the Club, welcomed the newcomers, referring to the privileges and obligations of the Cambridge-Bart's man. He mentioned the exuberant bore who recalled patronizingly that Bart's had treated the sick poor for 800 years in the very same place, and the rebuke from a less privileged mortal—"and in the very same way."

Much of the success of this activity of the Club depends upon voluntary effort, particularly by the Ladies; Miss Nerys Davies, their secretarial representative, is to be congratulated upon the feminine contribution to a very pleasant occasion.

\* \* \*

### The Journal

Mr. C. J. Carr has resigned from the post of Manager. The Assistant Manager, Mr. M. I. D. Cawley, has been elected in his place.

Mr. John Chapman has been elected new Assistant Manager.

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## NOTICES

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### Assistant Editor

The post of Assistant Editor will be vacant soon. Applications must reach the Editor by November 30th.

\* \* \*

### Amateur Dramatic Society

On Monday and Tuesday the 25th and 26th of November, the Dramatic Society will present "Count Your Blessings", a comedy by Ronald Jeans.

Tickets are available on and after 5th November, 1957 from:— The Business Manager, Dramatic Society, St. Bart's Hospital, London, E.C.1.

The Society looks forward to good support from everyone.



### Lecture on General Practice

In the series of lectures on General Practice, Dr. G. F. Abercrombie will lecture on "The Family Doctor and his Patients" in the Clinical Lecture Theatre on Friday, December 6.

\* \* \*

### XIVth Decennial Club

The second Annual Meeting of the Fourteenth Decennial Club is being held this year on Friday, December 13th at 6.30 p.m. in the White Hart (opposite the Giltspur Gate of the Hospital).

Anyone who entered Bart's between 1945 and 1955 and who is now qualified is eligible to be a member of the Club.

The secretaries have sent an invitation to the meeting to as many members as possible; there are however still some whose addresses we do not have so would those who wish to attend this meeting or be notified of future ones please get in touch with J. A. Parrish, Department of Pathology, St. Bartholomew's Hospital.

---

### ANNOUNCEMENTS

---

#### Engagements

**ADAMS—WILKIE.** The engagement is announced between John Charles Linley Adams and Sheila Margaret Wilkie.

**PATTERSON—STOKES.**—The engagement is announced between Mark Jonathon Lister Patterson and Jane Stokes.

**STEVENS—OWEN.** The engagement is announced between John H. Stevens and Noreen C. Owen.

#### Marriages

**LAMMIMAN—GRAHAM.** On September 7th, Dr. David A. Lammiman to Sheila M. Graham.

**LOWE—SCOTT.** On September 7th, Francis MacPherson Low to Juliet Frances Scott.

**NICHOLSON—LAURIE.** On September 28th, John Rumney Nicholson to Ruth Turner Laurie.

#### Births

**ARCHER.**—On September 1st, to Jean, wife of Dr. Robert Archer, a daughter (Catherine) sister to Diana and Juliet.

**BORRELLI.**—On September 14th, to June and Victor Borrelli, a second son.

**DADSWELL.**—On September 20th to Margaret and Dr. John Dadswell, a son.

**GILKS.**—On September 19th, to June, wife of Dr. Michael Gilks, a daughter (Tessa Margaret).

**HILL.**—On October 11th, to Margaret, wife of Dr. John MacLeavy Hill, a son.

**HOOPER.**—On August 28th, to Rosemary, wife of Dr. E. R. S. Hooper, a daughter.

**KUNKLER.**—On September 20th, to Pamela, wife of Dr. Peter Kunkler, a son (Paul Anthony), a brother for Malcolm and Ian.

**LAVY.**—On September 6th, to Patricia and Gordon Lavy, a brother for Fiona (Christopher Brian Dyce).

**MASTERMAN.**—On October 8th, to Mary, wife of Mr. E. B. Z. Masterman, a daughter.

**PORTEOUS.**—On September 15th at St. Bartholomew's Hospital, to Margaret, wife of Dr. Colin Porteous, a son (John Graham), brother to Rosemary and Helen.

**SCOTT.**—On September 19th, to Rosemary and Surg.-Lt. H. G. Scott, R.N., a son, brother to Christopher (Jonathan Humphrey).

**WYNNE-JONES.**—On October 6th, to Barbara, wife of Dr. Philip Wynne-Jones, a daughter (Amanda).

#### Deaths

**BOWLEY.**—On September 12th, Maria Bridget, widow of Sir Anthony Alfred Bowlby, Bt., K.C.B., K.C.M.G., K.C.V.O., F.R.C.S.

**COOKE.**—On September 16th, Clement Cooke, aged 64. Qualified 1915.

**DAVIES.**—On September 28th, S. Trevor Davies, aged 75. Qualified 1908.

**GRELLIER.**—On September 10th, Bernard Grellier, aged 70. Qualified 1913.

**PARSONS.**—On October 7th, Sir John Parsons, aged 89. Qualified 1892.

**STRUTHERS.**—On October 13th, Ronald Anderson Struthers. Qualified 1949.

**TODD.**—On September 23rd, Charles Todd, aged 88. Qualified 1894.

**WILSON.**—On October 7th, Ambrose Cyril Wilson. Qualified 1908.

## LETTER TO THE EDITOR

### MONEY FOR COLOUR

Sir,—Assuming a steady clinical student population of 250, the College will now have, by virtue of the inflationary level of the Caution Money levied for the new lockers, a permanent loan from the students of £250. I have it on good authority that with judicious (and quite safe) investment, this could give a gross yield of as much as £20 per annum. I am sure such a sum could be put to good use, if only to have the cloakroom painted a more agreeable colour.

Yours sincerely,  
A. M. BIRT.

Abernethian Room.

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### CALENDAR

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Sat. „ 16 Dr. R. Bodley Scott and Mr. R. S. Corbett on duty.  
Anaesthetist: Mr. R. W. Ballantine.  
Hockey: v. Hampstead 2nd XI (H).

Soccer: v. Old Reptonians (H).  
Rugger Club Dance.  
Tues. „ 19 Abernethian Society Meeting.  
Speaker: Lieut.-Gen. Sir Alexander Drummond, K. B. E., C.B., Q.H.S., F.R.C.S., D.L.O., Director-General Army Medical Services. Physiology Theatre, Charterhouse, at 5.45 p.m.  
Wed. „ 20 Soccer: v. Guy's Hospital (Cup 2nd Round) (H).  
Sat. „ 23 Dr. E. R. Cullinan and Mr. J. P. Hosford on duty.  
Anaesthetist: Mr. C. E. Langton Hewer.  
Hockey: v. Old Cranleighans (H).  
Soccer: v. Westminster Hospital L (A).  
Sat. „ 30 Medical and Surgical Professorial Units on duty.  
Anaesthetist: Mr. G. H. Ellis.  
Hockey: U.C.H. (A).  
Soccer: v. Middlesex Hospital L (H).  
Tues. Dec. 3 Abernethian Society Film Show. Physiology Theatre, Charterhouse, at 5.45 p.m.  
Wed. „ 4 Soccer: v. St. George's Hospital L (H).  
Sat. „ 7 Soccer: v. U.C.H. (A).  
Sat. „ 14 Soccer: v. Westminster Hospital Sports and Social Club (A).

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## STAMMERING

by R. B. HARCOURT

AS SPEECH is one of the most highly integrated forms of neuronic activity, it is to be expected that imperfections in it should be of relatively frequent occurrence. Of these imperfections, stammering is by far the most common, and is estimated to have an incidence of one per cent in the general population.

There are two broad categories into which this phenomenon may be divided. A stammer may first appear in adolescent or adult life in relation to some emotional problem, or alternatively, it may date back to early childhood. The former is the much more uncommon type, and is a form of speech disorder which is easily imitable by voluntary effort, and is in effect an hysterical symptom of purely psychic origin. The Adlerian interpretation of the psychopathology of stammer-

ing maintains that the patient, suffering from feelings of insecurity and inferiority, is able to dominate his associates and to draw attention to himself by an impediment of speech which requires close attention from the listener. This type of stammerer may not feel embarrassed by his disability, but finds in it an excuse for not attaining the position of distinction in society which he inwardly desires.

The second type of stammer, and the more common one, is only partly a psychiatric problem, having an important physiological component. It is not susceptible to close imitation, and can often attain considerable complication in the form of clonic and tonic spasms of the muscles concerned in speech production. The physiological basis lies in an instability of the neuromuscular organisa-



tion. There is interruption and poor co-ordination at some level between the speech centre in the motor cortex and the muscles concerned in speech production. Evidence for this underlying physiological origin lies in a family history of stammering, which is fairly often elicited; in the correlation between stammering and left-handedness; in the evidence that stammering may follow encephalitis lethargica, and that stammerers may show some backwardness in other fields of motor co-ordination. The correlation between stammering and left-handedness in the patient and his relatives has given rise to the theory that the stammer is caused by a transient rivalry between the two hemispheres for cerebral dominance, producing incomplete dominance of the leading hemisphere, with crossed laterality and impairment of speech production.

There is, however, at the same time an important psychiatric component to the clinical picture. Minor organic faults or disturbances of dominance are, as a rule compensated for, and overcome during the normal process of growth and development. But if at any time unfavourable emotional tensions develop, due either to over-anxious and perfectionist parents, a bullying brother or a domineering teacher, impairment of certainty and control may lead to a stammer. Acute factors, such as a sudden fright have been held responsible, but it is much more likely that the factors concerned are anxiety and the general pressure of the life-situation. The importance of anxiety as a disposing factor in the production of a stammer is difficult to assess, as it appears that all types of personality are affected in all strata of society, independent of class, environment, physique, race, language or nationality. There is, however, a differential sex incidence, with a rough 4:1 ratio of boys to girls affected. This has not yet been satisfactorily explained, although the fact that girls acquire speech earlier, and make use of it more easily and purposefully than boys, may be of significance.

It is in this aspect of the basis of the impediment that it is difficult to differentiate clearly between the two types of stammerer already mentioned: it may be true that in a certain number of cases the same factors influence the child in its production of stammer as influence the adult in the production of his hysterical type of symptom. It

has been stated by some authorities that stammering can originate around infantile conflicts even as early as the suckling phase.

However, whatever the cause of the stammer, the patient is undoubtedly unfavourably influenced by his symptom. He becomes insecure in his relationships with his parents and fellow children, and is driven into isolation by his speech consciousness. His parents are apt to feel that the child can overcome the impediment by an act of will, and failure of the child to achieve this increases his tension, which makes his speech still worse. The knowledge that the stammer is more pronounced in certain situations increases the child's frustration. Thus, frustration and tension in child and parents may lead to a habit formation and a stammering pattern. When the patient is seen by a psychiatrist, the underlying cause may well not be apparent, and the anxiety picture is more likely to be the result than the cause of the impediment.

Treatment of stammer varies with its apparent cause. In the type of stammer first described, where the impediment would seem to be a symptom of a hysterical type, change in the patient's environment combined with, or substituted by, psychotherapy on Adlerian lines is the most favourable approach. *Treatment of stammer in the child should be begun early, but is often delayed because of the mistaken belief of the parents and family doctor that the child will grow out of the impediment.* Treatment should be directed towards the child's parents and teachers as well as towards the child himself—their distress and anxiety, their perfectionism and their inclination to coercion will all have to be combated, so that a change in the child's emotional atmosphere may be brought about.

Psychotherapy then aims towards enabling the child to relax and use his speech apparatus freely and unconcernedly whatever his audience—while speech therapy attempts re-education of speech, using a mixture of suggestion and some mechanical trick of articulation.

The prognosis of stammer of an early origin of the physiological type is good, and there may be a spontaneous disappearance in the course of later adolescence, but it must be remembered that a previous stammering pattern may be re-aroused at some subsequent time under conditions of emotional stress.

## THE RÔLE OF PHYSIOTHERAPY IN THE TREATMENT OF ASTHMA

by TRUEDA WAREHAM

AS AN ADJUNCT to medical treatment, Physiotherapy is of real value in nearly every case of habitual asthma. The treatment has two main aims; firstly, to teach the patient a regime to adopt during attacks and secondly, to improve his whole respiratory mechanism by teaching habitual relaxation, correcting breathing patterns, mobilizing the thorax, helping to get rid of excess mucous secretions and thus gaining a greater exercise tolerance. It is a fairly complex treatment which demands a great deal of hard work and concentration on the part of both patient and therapist.

The approach to the patient is most important. While having sympathy and tact, the physiotherapist must be forceful and determined with the personality to convince the patient that he can help himself. The physiotherapist also has to make the patient persevere with the endless practice necessary for adequate control. Nearly all asthmatics are intelligent and only too eager to help themselves once shown the way. Every part of the treatment must be simply and carefully explained so that the patients will understand the reason for each activity.

### RELAXATION

The patient holds himself habitually tense and even mild cases find it difficult to relax even when lying down fully supported.

Complete relaxation is taught lying on one side, slightly turned forward (Fig. 1). He must first learn to relax the hands, then he learns to relax the arms, shoulder girdle and thorax and finally his whole body, face, trunk and legs. He then practices this relaxation in conjunction with correct breathing and the things are always thereafter combined so that an automatic pattern of relaxed breathing is built up which will, in time, become habitual.

Next, relaxation is taught in the sitting position with the head resting on the supported hands and forearms on a table (Fig. 2). Many patients find this the most helpful position during an attack—it prevents tension of the shoulder girdle and aids diaphragmatic breathing. It is obviously not always possible to lie down when an attack threatens and this position can be assumed under almost any circumstances.

The patient is instructed to practise these two positions again and again. Finally he is taught how to relax when sitting back in a chair, when standing and walking. Until all this has been achieved, he will not acquire the habit of voluntary relaxation and until he does this, he will not gain any really useful degree of control of his attacks.

### BREATHING

Correct breathing is another new habit only to be acquired by careful instruction and repeated practice. In asthmatic subjects, three outstanding faults will always be found—1. The breathing is mainly upper thoracic and expansion of the basal areas is very limited; 2. Expiration, instead of being a relaxed phase, is forced; 3. Normal rhythm is absent. These three points are explained and corrected separately and the asthmatic gradually learns basal expansion with relaxed expiration in corrected rhythm.

Before going further, terminology must be explained. In order to make sure that the patient learns the control of all parts of his thorax in breathing, one has to familiarise him with the following terms—'Upper thoracic breathing,' which he does too much, 'Middle thoracic,' 'Lower thoracic' and 'Diaphragmatic,' in which there is an accompanying rise and fall of the upper abdomen. Obviously, lower thoracic expansion is largely produced by the diaphragm but it is



*Fig. 1. The patient is taught to relax completely by lying on one side and turning slightly forward.*



*Fig. 2. The relaxed sitting position to be taken during an asthmatic attack.*

easier to keep to the clear cut divisions for the sake of simplicity.

#### TRAINING OF LOWER THORACIC AND DIAPHRAGMATIC BREATHING

If the patient is asked to take a deep breath, he will do this with a typical upper thoracic movement using his accessory pectoral and neck muscles to gain maximum expansion. If asked to expand his basal areas, practically no movement occurs. This basal expansion can only be learned through proprioception. The patient must learn to feel his lower ribs and only then can he regain the power of expanding them. The physiotherapist applies very firm pressure to the lower ribs and the patient tries to breathe in and push his ribs outwards against this pressure. Resistance is applied first against the antero-lateral aspects of the ribs, then with the hands behind, against the angles of the ribs.

Diaphragmatic breathing is taught with finger-tip pressure on the costal angle or with a hand laid lightly on the upper abdomen. As soon as these exercises are partly mastered, the patient must learn to do them while consciously relaxing his accessory neck muscles. Expiration must be taught correctly again at the same time—it must not be a forced effort but an essentially relaxed phase of breathing. The patient must not blow out his breath but sigh as he breathes out; with the physiotherapist applying firm pressure to aid full expiration, the patient will appreciate the sensation of collapse of the thorax.

It will be many weeks before full expansion can be obtained as the costal joints are stiff and have to be gradually mobilised. The thoracic cage is usually fixed in an inspiratory position in the asthmatic and it cannot sink in during expiration. With perseverance, however, muscular control and mobility are regained. This breathing is taught in both positions of relaxation and later, while the patient is sitting and standing.

Finally, a webbing strap may be used and the patient is taught to use this to provide resistance to his thoracic movements.

#### RESPIRATORY RHYTHM

Nearly all asthmatics tend to breathe with a long inspiratory and a short expiratory phase. This form of breathing becomes

grossly exaggerated during an attack. From the start, this anomalous breathing must be corrected by breathing to the counting of numbers, with the physiotherapist counting in monotones rhythmically—'In, two, Out, two, three'—matching the total speed of the patient's respiration. This must be repeated so often that it becomes habitual. Later, patients are taught how to breathe in time to walking, especially when hurrying—two steps to breathe in, three to breathe out. Presently, they will find this method of counting-breathing particularly helpful while negotiating stairs.

As with all this re-education, the patient must be made to make it part of his everyday's activities and not just to regard it as a thing to be practised at his physiotherapy session alone or when he is quietly at home. The degree of success is dependent upon how much he practises daily—whether he is sitting in a train or bus, walking about, or at any other occupation.

#### THORACIC MOBILITY

As has been stated previously, the stiffness of the thorax is a very severe physical disability which has to be overcome. The costal joints are mainly mobilised by the breathing exercises, but in addition, simple and localised mobilising exercise should be taught for the thoracic spines.

#### EXERCISE TOLERANCE

Provided that the heart is normal, a progressive scheme of general exercise should be decided upon and the patient's activities at home discussed so that he is encouraged gradually to do more. He is encouraged to walk further, to climb stairs, and in the younger patient, to run, jump and to take part in various forms of sport. The young adults are often horrified at the mere suggestion of tennis or swimming, and yet they can even play squash and find themselves the better for it.

These activities will, and should, be strong enough to cause mild breathlessness. The asthmatic is then shown how to overcome this by lying or sitting down in the correct position and relaxing consciously while doing diaphragmatic and lower thoracic breathing and maintaining a correct rhythm. Later, he will be able to overcome

his breathlessness by just sitting relaxed with his back against a chair.

### SPUTUM

When excess mucous secretions are present, these can be got rid of much more quickly with chest percussion. The patient lies on a tipped bed or couch and rolls from one side to the other, relaxing and breathing correctly while percussion is given.

As will be discussed later, when sputum must be got rid of before going to bed (especially in the cases of those patients who get attacks in the middle of the night), a member of the family should be instructed on how to do this for the patient about an hour before he retires.

It should be noted that these patients often cough up very little sputum at the time of percussion but they continue to do so about 20-30 minutes after the treatment.

### TRIGGERS

Of the factors which will trigger off an attack, three important ones can be helped by physiotherapy. These three factors are—tension and anxiety, a productive cough, and simple breathlessness. When the patient can learn to use physical measures to combat an attack, he will to a remarkable degree become less dependent on drugs.

### Tension and Anxiety

With the normal individual, to be in a state of anxiety is usually an uncomfortable and wearing state. The asthmatic, however, responds by becoming physically tense. One can see it in the clenched hands, facial expression and shrugged shoulder girdle. If the asthmatic continues in this state for any length of time, there appears to be a gradual and associated build-up of bronchospasm which culminates in an attack. These patients are often aware of how much their states of mind affect them. They must learn to acknowledge and recognise the state of tension and to combat it vigorously so that, having taken whatever drug as has been prescribed to them, they can then concentrate on reinforcing its effect by relaxation and controlled respiration. With encouragement and repetition, the patient will find that his attacks can be mitigated more and more successfully and often a mild attack can be aborted by these methods alone.

### Productive Cough

It is not uncommon for one to come across a patient who has learned to control his relaxation and breathing and to find him suddenly getting severe attacks in the early hours of the morning. Almost invariably it will be found that he has recently had a cold or cough and this is often the worst time for the asthmatic who has the added misfortune of reckoning with an attack of acute bronchitis.

The mechanism of this appears to be simple and may well be as follows—the patient goes to bed with a considerable amount of mucous secretions in his lungs; he lies asleep for some hours in the one position, e.g. on his left side. The secretions thus tend to gravitate and collect in the lateral areas of his left lung. In the early hours of the morning, he turns over to his other side. The accumulated secretions now have a tendency, assisted by gravity and the cilia, to move towards the mid-line. Some twenty minutes later, when he is again soundly asleep, the mucus reaches a main bronchial division and the cough reflex is stimulated. The patient has the frightening experience of waking up choking and gasping for breath. Naturally before he is fully awake, he is well into an attack.

These patients should have percussion and modified postural drainage twice a day, once by the physiotherapist with his other treatments and again in the evening by a member of his family. The effect is often spectacular and the relief and gratitude of the patient is great. Once the patient realizes that the situation can be controlled, he will have greater faith in his own efforts.

### Breathlessness on Exertion

The normal person becomes breathless if he over-exerts himself. He accepts this as normal and forgets about it soon after. On the other hand, some asthmatics in similar circumstances, because their limited respiratory excursion cannot be much increased, experience greater discomfort. They become tense as well as breathless. An attack is thus precipitated. This state of affairs is most common in the older emphysematous patient, but even with this added disability most patients can be helped and also made to realise that they must recognise breathlessness on exertion as a normal reaction.



They must be taught to combat it by relaxing and breathing diaphragmatically, thus preventing it from progressing to an attack.

#### POSTURE

With the years, the asthmatic develops the typical hunched stooping posture. Effort should be made to correct this. In the child it should be prevented, in the young adult, corrected and in the middle aged, improved slightly. It is doubtful if anything can be done in the older patient.

#### THE ASTHMATIC ATTACK

Patients are encouraged where possible, to come up to the Department when they get an attack so that their relaxation in both postures of sitting and lying may be done under supervision, and maximum benefit may be gained by them. When a patient in status asthmaticus, who has had no previous instruction is admitted to a ward, the Physician orders physiotherapy as part of the general regime of treatment. Co-operation of the patient is gradually obtained; sessions being short and frequent with emphasis being placed on relaxation and breathing. The patient will be afraid of lying down during his attack. He is propped up with pillows in such a high position that his elbows are unsupported. His fear of lying down will be gradually overcome by encouragement and persuasion. Intermediate positions produced by lying back against fewer pillows are totally unsatisfactory for the teaching of relaxed breathing. After a day or two, treatment is intensified, with more exercises being taught day by day.

As can be seen from the preceding summary, there are many things which have to

be learned about the patient before he can derive maximum benefit from his exercise. Unless he is willing to work hard, the results will not be good. It is to be stressed that only a physiotherapist with a forceful personality can be really successful with such patients.

#### CHILDREN

The fundamental principles of treatment are the same. Greater activity and games are encouraged. Relaxation is taught on the floor with the child sitting on his heels and with his head on his forearms which are resting on a pillow. This position is found to be most comfortable and it is surprising to see how easy it is for them to do diaphragmatic breathing in this position when they can manage it in no other.

The parents must be instructed on the regime to be adopted. They are told that when the child gets breathless, he takes up this position or the one in which the child lies on one side. The mother should then calmly and gently remind the child of his breathing. (It is a well known fact that few children get attacks when they go to boarding school—anxiety on the part of parents must have some sort of detrimental effect on these children). The parents should be encouraged to be matter-of-fact in their outlook and also to be quite firm in having their children perform their daily exercises.

Physiotherapy as practised at this hospital and at most if not all hospitals in this country, forms only part of the total treatment of asthma by medical means—it is, however, a useful adjunct to the treatment of what used to be a hopelessly crippling disease.

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## SO TO SPEAK

#### Theory of Relativity

DR. B——E: "Of course this business of dementia is relative: if Einstein had complained of difficulty with his integral calculus that would be dementia, but if I said I had trouble with it that would be boasting."



## A COMMENT ON THE PRESENT RHESUS BLOOD GROUP TERMINOLOGY

by H. LEHMANN and H. F. BREWER

THE FACT that blood groups are inherited is one of the fundamental assumptions of paternity tests. Our inherited characters are reproduced in succeeding generations by the action of genes. These are arranged in chains—chromosomes. Their order in the chromosomes is definite and sequential so that each gene has its specific locus. After fertilization the new individual has a duplicate set of chromosomes, one derived from each parent, and as a result of this, the individual may show two different characters for the same locus on the chromosome. For instance, a person may have the blood groups A and B because one chromosome carries the gene responsible for blood group A and the other corresponding locus is occupied by the gene for blood group B. Such an individual is "heterozygous" for the genes responsible for blood groups A and B. An individual would be "homozygous" if the loci were occupied by the same gene whether it be A or B. Different genes such as those for blood groups A, B or for that matter O, which occupy the same locus are "alleles." Their products or blood group substances A, B and O are "allelomorphs," and the three blood groups A, B, O form one blood group system.

Genes of other blood group systems occupy loci on other chromosomes. Sometimes there are two or three loci on one chromosome which are occupied by genes forming one system. In the MNSs system, two loci on each chromosome are involved; one being occupied by the alleles M and N, and the other by the alleles S and s. Recently the system has been extended and includes loci for the blood groups Henshaw<sup>+</sup> and Henshaw<sup>-</sup>, Hunter<sup>+</sup> and Hunter<sup>-</sup> etc.

Before the germ cell matures, the chromosomes split across and recombine, so that the mature germ cell which after the "reduction division" carries only single unpaired

chromosomes, will nevertheless transmit properties of both grandparents to the new individual ("cross-over").

The loci for some gene systems are so close that the split across will rarely separate them and they are usually inherited together. Sometimes, however, such gene combinations may become separated and not be passed on as a unit. A rare combination will be formed which might give rise to the fallacious thought that a completely new trait has appeared, being previously absent in either parent.

There can be few students reading the general medical press—quite apart from those following the specialist journals—who are unaware that there are at least two distinct nomenclatures in use in the Rhesus blood group system. The Rhesus antigens were discovered one after the other. At first Landsteiner and Wiener<sup>1</sup> discovered Rh<sup>+</sup> and Rh<sup>-</sup> (or Rh and rh). Later Rh<sup>+</sup> became Rh<sub>1</sub>, Rh<sub>2</sub> and Rh<sub>0</sub>, and Rh<sup>-</sup> (or rh) was divided into rh', rh" and rh. Anti-bodies which agglutinated "rhesus positive" cells were called anti-Rh and others which agglutinated "rhesus negative" cells were called collectively anti-Hr.

This type of nomenclature has been associated with the concept of the single Rhesus gene. Though this gene was highly complex and could be responsible for a variety of antigens, these were not to be products of separate genes, but different facets of one single factor.

In 1943 Fisher studied the distribution and the inheritance of four Rhesus antigens described at that time as Rh<sub>0</sub>, Rh', Rh" and Hr'. Race<sup>2</sup> has described how Fisher demonstrated that two of these were "antithetical." Rh' and Hr' were inherited as if the genes responsible for their presence were alleles. They were called C and c respectively. One locus on the Rhesus chromo-

some was the C locus and could be occupied either by the C gene or by the c gene but not by both; C and c were allelomorphs. The other two antigens (Rh<sub>1</sub> and Rh<sub>2</sub>) were not antithetical and their inheritance bore no relation to those of the C type; they were called D and E. This nomenclature was developed to imply that there was no single Rhesus gene but that there was one Rhesus chromosome with three neighbouring loci. Each locus could only be occupied by one gene, the C locus by C or c, the D locus by D or by a hypothetical d, and the E locus by E or by a hypothetical e. Wiener postulates a single Rhesus gene with multiple alleles at a single locus, whereas Fisher and Race suggest that there is a chain with three distinct loci liable to "cross over."

Soon after e had been postulated by Fisher and Race, Mourant<sup>4</sup> discovered anti-e, and the rare blood groups R<sup>x</sup> and r<sup>y</sup> were found to fit in the Fisher-Race pattern giving the reactions expected for CDE and Cde respectively. At one time it was thought that anti-d had also been found, but this was not confirmed subsequently. Another serum (anti-f) seems to indicate the possible existence of a fourth locus F. Table I compares the notations for the various Rhesus chromosomes.

TABLE I.—Differences in notation for some Rhesus chromosomes.

| Fisher's Annotation | Wiener's Annotation |
|---------------------|---------------------|
| CDE                 | R <sup>z</sup>      |
| cDE                 | R <sup>2</sup>      |
| CdE                 | r <sup>y</sup>      |
| cdE                 | r <sup>z</sup>      |
| CDe                 | R <sup>1</sup>      |
| cDe                 | R <sup>0</sup>      |
| Cde                 | r <sup>1</sup>      |
| cde                 |                     |

Much emphasis has been laid by Wiener on the fact that anti-d has never been shown to exist. However no one doubts the existence of a blood group O gene although no antibody specific for the product of this gene has yet been discovered. There are antigens whose presence is related to blood group O. Though anti-H and "anti-O" do not act specifically on the O blood group they will preferentially agglutinate O cells. Perhaps anti-f is similarly related to d.

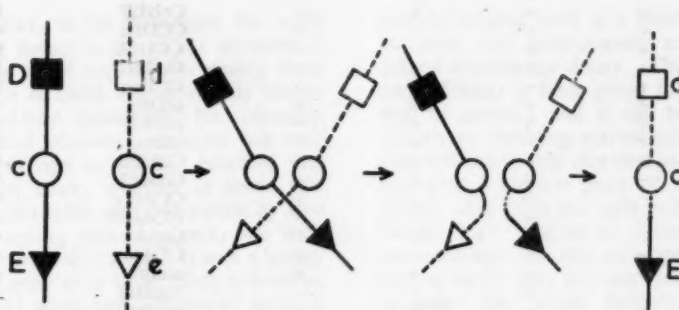
There is no need to assume a great variety of blood group substances. For the ABO blood groups evidence has come forward to

show that there may exist one ABO matrix on to which the A or B blood group antigen is grafted. Morgan and Watkins<sup>5</sup> found that in artificial mixtures of A and B, anti-A would precipitate only A, but when added to AB material both A and B were precipitated. Anti-B serum would precipitate only B substance from a mixture of A and B material but both A and B activities were carried down from an AB substance. One has to visualise a common ABO substance and the effect of an A or B gene would be a slight alteration in the chemical composition of this common matrix. Whether the genes for blood groups A and B will necessarily act on all the "matrix molecules" of the AB heterozygote has recently been doubted. Goudie<sup>6</sup> found in AB individuals both AB cells and B cells without an A antigen. In the case of the normal adult and sickle-cell haemoglobins Ingram<sup>7</sup> has shown that the gene for sickling is responsible for one single change in one of some 25 peptide chains into which he was able to separate the globin molecule. Each chain consists of approximately ten amino-acids. The only difference between the two haemoglobins is that in one of these chains one amino-acid is either glutamic acid (haemoglobin A) or valine (haemoglobin S). The genes responsible for these two allelomorphs are acting on the same matrix but they produce two distinct haemoglobins in the heterozygote. For the Rhesus blood groups the abnormal amount of D antigen in -D-/-D- cells (Wiener's R<sup>0x</sup>) may suggest a common matrix. These cells which contain only D and no antigens of the C or E type are particularly rich in D antigen so much so that they are unique in their ability to be agglutinated in saline by incomplete anti-D. It seems that a limited amount of Rhesus substance is available for specific elaboration by such genes as are present.

The most important difference between the Rhesus chromosome of Fisher and Race, and that of Wiener is that the first allows a "cross over." When the germ cells mature and the chromosomes unfurl and are divided into two halves the Rhesus chromosomes would cross and separate between the Rhesus loci. On their recombination new combinations of genes would arise. Such a cross over would explain how certain rare Rhesus blood groups could have been formed. These unusual combinations would be rare because the CDE loci (arranged DCE) are close

neighbours and would usually be inherited all together.

Thus the rare blood group cdE (Wiener's  $r''$ ) could arise from cDE and cde as described in the figure:—



The formation of the rare chromosome cdE by "cross-over" of the two chromosomes cDE and cde. The linear arrangement of the loci is thought to be DCEF. This illustration is based on Fig. 14 in Race and Sanger's "Blood Groups in Man"<sup>13a</sup> and on Fig. 9 of an article by Lehmann<sup>14</sup>.

Wiener on the other hand would suggest a change of the single gene by mutation. No evidence of crossing over between D and C or between C and E has yet come forward, and when it should be found, it would still be possible to argue that only one gene was involved. Geneticists have in recent years postulated an arrangement of "pseudo-alleles" which although situated at one locus allow a cross over, though presumably if crossing over is possible there must be a linear arrangement even for pseudo-alleles although this would of course be very close. Thus the criticisms of the Fisher-Race chromosome concerns merely "the highly academic and interesting point whether the three allelomorphs sites of Fisher are to be placed within or without the boundary of one gene."<sup>15b</sup>

The MN chromosome has aroused much less controversy and there has been more readiness to adopt the conception of a chromosome along which there are loci for the genes for blood groups MN, Ss, Henshaw<sup>+</sup> and Henshaw<sup>-</sup>, Hunter<sup>+</sup> and Hunter<sup>-</sup>, and the presumed allelomorphs Miltenberger and Verweist. The Verweist gene is accompanied by those for Ns, and the slightly different Miltenberger gene is associated with the genes responsible for MS<sup>16</sup>. There is some anthropological evidence of crossing over in this system. Whereas Henshaw<sup>+</sup> is associated with NS in West

Africa<sup>11</sup>, in South Africa it is associated with MS<sup>12</sup>.

There can be no doubt—whatever the theoretical associations—that the CDE nomenclature is much more easily under-

stood than Wiener's Rh notation. Thus for cattle and chicken<sup>13, 14</sup> a nomenclature of the Fisher-Race type was adopted although the workers assumed that they were dealing with multiple alleles of the kind Wiener postulated for the Rhesus system.

One difficulty which arises from the Fisher-Race notation is concerned with the description of the "probable genotype." Each individual has two Rhesus chromosomes and without a family study the probable genotype has to be assumed on the basis of the over-all frequency of the different chromosomes in a population. Cells reacting with anti-C, anti-c, anti-D, and anti-e, but not with anti-E are therefore most likely to represent the genotype CDe/cde, if the subject is an Englishman. If the blood is that of a West Indian immigrant it is much more probable that the genotype is CDE/cDe. Another possibility though not very probable would be the genotype Cde/cDe. Dr. Mourant<sup>15</sup> has developed a notation which simply indicates which antigens have been shown to be present (Table II.). Mourant's notation in this case would be CcDee, and the arrangement of the loci is left open. This is a safe and accurate description, and it might perhaps be much better to use this notation as a routine, and to supplement the information it conveys with that of probable genotypes only when this is specially asked for. In such cases, which would be exceptional rather

TABLE II.—Mourant's Phenotype Notation.

| Reactions with Antisera |        |        |        |        | Mourant's<br>Phenotype<br>Notation | Commonest<br>Genotype<br>(in European<br>Populations) |
|-------------------------|--------|--------|--------|--------|------------------------------------|---|
| Anti-C                  | Anti-D | Anti-E | Anti-c | Anti-e |                                    |   |
| +                       | +      | +      | +      | +      | CcDEe                              | CDe/cDE   |
| +                       | +      | +      | +      | —      | CcDEE                              | CDE/cDE   |
| +                       | +      | +      | —      | +      | CCDEe                              | CDE/CDe   |
| +                       | +      | +      | —      | —      | CCDEE                              | CDE/CDE   |
| +                       | +      | —      | +      | +      | CcDee                              | CDe/cde   |
| +                       | +      | —      | —      | +      | CCDee                              | CDe/CDe   |
| —                       | +      | +      | +      | +      | ccDEe                              | cDE/cde   |
| —                       | +      | +      | +      | —      | ccDEE                              | cDE/CDe   |
| —                       | +      | —      | +      | +      | ccDee                              | cDe/cde   |
| +                       | —      | +      | +      | +      | CcddEe                             | Cde/cDE   |
| +                       | —      | +      | +      | —      | CcddEE                             | CdE/cdE   |
| +                       | —      | +      | —      | +      | CCddEe                             | CdE/Cde   |
| +                       | —      | +      | —      | —      | CCddEE                             | CdE/CdE   |
| +                       | —      | —      | +      | +      | Ccddee                             | Cde/cde   |
| —                       | —      | —      | —      | +      | CCddee                             | Cde/Cde   |
| —                       | —      | +      | +      | +      | ccddEe                             | cdE/cde   |
| —                       | —      | +      | +      | —      | ccddEE                             | cdE/cdE   |
| —                       | —      | —      | +      | +      | ccdde                              | cde/cde   |

than the rule, all possible genotypes should be stated in order of probability: CDe/cde; CDe/cDe; Cde/cDe. Another difficulty is that the sequence CDE does not correspond with the now assumed order DCE. It is difficult to understand the genetical considerations of crossover and of deletion unless one realises that the CDE system is thought of as DCE. For instance the rare Rhesus blood group -D- where it is assumed that a deletion of the C and E loci has occurred is easily understood if one thinks of it as D—, whereas a deletion of loci at either side of one locus is almost unthinkable. The change of the CDE notation into a DCE notation would greatly help in making Fisher's and Race's ideas more clearly understood and would incidentally put first that antigen, viz., D—which is also clinically of primary importance. The report on the cells reacting with anti-C, anti-c, anti-D, and anti-e but not with anti-E would then read: Phenotype DCcee with genotypes in order of probability (in an Englishman) DCE/dce; DCE/Dce; dCe/Dce.

If a DCE rather than a CDE notation and Mourant's arrangement of the description of the Rhesus phenotype were more widely adopted, Boyd's<sup>16</sup> recent conclusion would become even more valid than it is already: "For practical purposes there is no difference between Wiener's series of alleles and the closely or completely

linked loci postulated by the British. The same findings may be predicted from both theories, and both are based on facts. The swing to the British notation is rather to be traced to the advantages that it has a notation, and for teaching and medicolegal purposes." Such an unbiased opinion of an experienced practitioner and teacher of serology admirably sums up a situation which might well confuse the uninitiated.

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## PUDDINGS

by R. L. W. CLEAVE

THE OTHER DAY, in the Refectory, for want of something better to do at the moment, I was watching some consultants eating their puddings. One of them was obviously enjoying his marmalade sponge and his colleague on the left had obviously enjoyed his very much too—perhaps more so. Another was making rather heavy weather of some rice pudding and the table was completed by two others both eating stewed plums, one with and the other without custard. It was a happy scene and worthy of a little quiet reflection. One wondered what had influenced each in his choice, and whether he would have the same tomorrow. One unconsciously classified them into marmalade sponge eaters, rice pudding eaters and stewed plum eaters. The custard was rather a problem; one dwelt on the possible explanations. One compared the various sponge eaters throughout the room, both the senior and the junior. One did the same with the rice pudding eaters and the eaters of stewed plums. One tried to relate the type of person to the type of pudding he was eating. In some cases there did seem to be a remote relationship. By this time the puddings were finished. Coffee and cigarettes were ending the meal. Once again there was much variety and altogether it was a delightful study in free will.

The thought of free will diverted my train of thought on to the morality of their various choices. Was it right to choose marmalade sponge when there were stewed plums available, or was it really just a matter of preference after all? Some puddings, so we are told, are better for us than others and this rather makes an issue of pudding choosing. Over the matter of puddings most people would brush aside the issue; nevertheless the choosing of puddings is but one choice in a life-time of choices; choices not only between food but also between habits and patterns of life. Day by day, unconsciously we make choices that accumulatively exert a definite effect. It is therefore worthwhile to consider them for one moment before they return again to the realm of reflex action.

To go back for one last moment to these puddings. Imagine a piece of sugary mar-

malade lodging itself in a food trap amongst the teeth and subsequently setting up conditions suitable for decay. This is the beginning of what is later going to cause a great deal of misery; and it can be traced back directly to choosing marmalade sponge. But, you will say, is not this just as likely to happen with a sugary piece of rice or stewed plum? Are there any safe puddings that will not do this? The writer contends that there are puddings that are safe and a consideration of which they are, and why, enables one to make the whole business of pudding choosing easy. It throws all such choices as these together and gives one reasonable grounds for differentiating between them. It necessitates, however, a lengthy digression into those processes that have directed the path taken during evolution.

The fundamental objection to all these puddings is that they are not *natural*; we are not *adapted* to them, *otherwise we would never get caries from them*.

The words *natural* (and *unnatural*) and *adaptation* are often used with different meaning. It is the moment by moment fulfilment of the laws of matter and energy that gives rise to the concept of "Nature". It does not imply purpose or a governing force. It is merely a convenient word with which to describe the activity that goes on around us. No part of Nature therefore can be *unnatural*. For the purpose of making the argument clear it will be necessary to strictly limit the meaning of "natural" and I must make use of an analogy.

The lifts in College Hall are designed to carry up to 12 people. Under such a stress they will fulfil their function—that of lifting. It is *natural* for them to do so; they are *adapted* to doing it. Equally, among living organisms a *natural stress* is a stress to which the organism in question is *adapted*. This does not apply to stresses only but to all the factors upon which the existence of the organism depends. The function of a lift is obvious, but the function of a living organism is less easy to define. For animals at least one is forced to say that their function is to reproduce and so keep their species alive.

Since this is 'their function', the only absolute test of adaptation is that of whether the particular type of organism in question is alive or not.

Zoologists would rightly question the statement that one type of organism is more adapted than another, unless one of them was extinct. But some stresses are not matters of life and death, and differing individual response in the face of the same stress in these cases would seem to suggest differing degrees of adaptation. This is using the word adaptation in a more limited sense i.e. as a *measure of the response to a particular stress*, and not to the stress of living as a whole. It is in this second sense that it will be used here.

The stresses to which living organisms are subjected fall into two categories; those imposed by the physical conditions of the environment and those imposed by the competition of other living organisms. The degree of adaptation to these stresses is largely a function of the length of time for which they have been operating, for time enables the process of elimination of the unfit to proceed towards completion. Where the competition is high slight inadequacies become of crucial importance; in fact, become matters of life and death. But this process of elimination of the unfit never does reach completion because of change both in the physical conditions of the environment and of change in the quality of the competition offered by other organisms. Nevertheless the degree to which adaptation of these two types of stress does occur is different in the two cases. This is because the physical stresses imposed by the environment remain relatively the same for long periods. Certainly vast geological upheavals do produce widespread extreme changes but between these catastrophes there are often periods of relative constancy extending into many millions of years. There are severe changes that occur locally during these periods but by and large these stresses remain the same. These long periods in the presence of severe competition will produce a very high degree of adaptation towards these physical stresses. [This was the time when physiology was in the making]. But this never has a chance to happen with regard to the stresses imposed by competition from other living organisms. This competition usually exists in the form of a host-parasite equilibrium. Mutations constantly threaten the status quo and no type of organism can

ever develop complete and permanent immunity from potentially pathogenic organisms. This may be because a temporary and unavoidable change in the external physical conditions lowers its resistance, or because the potential pathogen develops some new and virulent property against which the host organism has (as yet) developed no resistance. So although the process of adaptation to the physical stresses of the environment is a continuous one, that of adaptation to the stresses imposed by competitive organisms never is; it never has the chance of proceeding far. For this reason an African may go out into the tropical sun, and an European into the European sun, without any ill effects, but neither can expect any similarly certain immunity if there are competing organisms around, whether these be snakes, wolves or bacteria.

By means of the discoveries that have resulted from man's greater intelligence it has been possible to swing this equilibrium between himself and his parasites far in his own individual favour. Ever since the discovery of death, individuality has been an obsession. Religion preserves it after death, and medicine before and naturally both have flourished. Now that this competition from other organisms is being increasingly well met it is to be expected that nearly everyone will enjoy almost uninterrupted perfect health from the cradle to the grave. The only stresses to which man has no complete or permanent immunity have been removed. The only ones that remain, apart from wars and accidents etc., are those imposed by the physical conditions of his environment, and adaptation to these has already had millions of years to take place. There will always be a certain proportion of disease and death resulting from what one might call imperfect reproductions, as typified by neoplastic disease in the new-born. Most of these will appear during infancy but some may make their appearance later. A certain proportion will be perfect reproductions but of poor heredity. This group is typified by such abnormalities as cleft palates etc.—it fades off imperceptibly into those otherwise described as normal. Apart from these (say) 15%, and excluding wars and accidents etc., the remainder should live their normal life span, whatever this may be, in the complete absence of non-infectious disease. There should be none at all, no caries, no obesity, no coronary thrombosis or cerebral



haemorrhages, no cancers etc., nothing. I know this is an over-simplification and an exaggeration but the bald principle holds good. Of course people are going to have to die of something, and if infectious disease is prevented, they will have to die from a non-infectious disease, but the acid point is that these deaths from such diseases as mentioned above will not occur until the end of the normal life span of the individual concerned.

Numerous qualifications leap to my mind as they will to yours but such digressions would divert attention from the main thread of the argument. The fundamental and inescapable point is that people are suffering during the best years of their lives from diseases which were ironed out of the race millions of years ago when competition made even small things matters of life and death. Why are the arches of people with flat feet falling when for millions of years they never have? Has a cat ever had flat feet? Once, when the foot was being evolved some cats had arches that may have collapsed. But this sort of error is an elementary and mechanical one. It falls into the same category as the error of eating too much, drinking too much, or breathing too much. Animals in their natural state, in which adaptation to the physical stresses of their environment is still very high, just do not suffer from these things. They may have once but they do not now. If an animal is transferred from its natural state to a domesticated one this no longer holds. If a dog is fat, his mistress is usually fat too. The answer is easy to see—for they invariably share the chocolate biscuits at tea time. But the dog in the natural state, or the fox if you like, does not get fat. It may well have a parasitic infestation of one sort or another which the sophisticated dog does not have, but it will be free of the non-infectious disease that usually accompanies such sophistication. The state of affairs in man's case is much the same, only worse. We do not, in civilised communities, have the parasitic infestations that plagued primitive man. Our intelligence has eradicated these, but far from eradicating disease as a whole, we have rather exchanged our diseases, and we now suffer from things which even primitive peoples have eliminated.

The explanation of this anomaly is that the physical conditions of our environment are no longer constant, but the changes are

self-inflicted. For example, if mankind has eaten raw food for millions and millions of years and then starts to cook it; he subjects himself to an entirely new stress. Since the stress is a new one there is no guarantee that it will be met without failure by everyone. It may be, but it may not. Another example is that of clothing. These two changes took place many thousands of years ago and some degree of adaptation has taken place. They are certainly irreversible changes and nothing can be done to prevent the ill-effects appearing. But even after all these thousands of years these ill-effects do still appear. Thus cooking food has softened it and killed it. The long-term effect of eating soft foods has deprived the jaws of much of the mechanical stress that is responsible for their normal development. For all that anti-Lemarkists may say, this has had the effect of diminishing the size of the mandible. The teeth, in man, no longer fit the jaw. It is a remarkable state of affairs. This result is absolutely irreversible and the overcrowding of the teeth has created food traps such that even raw foods may set up conditions suitable for decay, let alone highly civilised refined ones. A raw apple in a perfect jaw has never resulted in decay (or not for millions of years). If one looks at a cow's skull in a field (uncommon) it may be seen that the non-biting edges are encrusted with debris, but the teeth are perfect. Of course they are. During the millions of years when the cow's teeth and grass were being reconciled to each other all such errors were eradicated. A cooked apple affords no such guarantee of immunity from caries any more than stewed grass would for a cow. If one's life depended on one's not getting caries it is almost certain that everyone would prefer to eat raw food and trust to their jaws being sufficiently unchanged. It would be reckless to introduce another uncertainty and cook the food.

If anyone is not decided about the importance of following out the inferences from this argument, a short walk round the wards, 99 per cent full of non-infectious disease *at all ages*, would be instructive and probably sufficient. These are the long-term effects of unconscious choices; and they are significant.

So much then for the theory. In practical terms what does it amount to? Many of these changes that we have inflicted on ourselves are irreversible, and in other cases it is not economically feasible to revert to the

initial state. One must endeavour to make the best of both worlds and compromise. This is at least taking a calculated risk instead of a blind one. The three things that will most influence our physical health is the air we breathe, the water we drink and the food we eat. Fresh air is better than London air and London air than cigarette smoke. Water is better than whiskey or gin. Food should be lightly cooked and unconcentrated. How can one's appetite cope with such concentrated foods as sugar and starch in their refined states? Where possible the change imposed in the stress in question should be reduced to a minimum. Consider how much better off is the man who has his fish steamed rather than fried. It just so happens that frying produces more dilute carcinogens and dyspepsigens than steaming. It might take a lifetime's research to establish this, but a compromise view gets the answer first. The temperature is lower with steam, therefore use steam, Q.E.D. This applies to brown bread vis à vis white. For all that eminent nutritionalists may say brown bread is better for one than white; one has had longer to become adapted to it, and it is less concentrated, two adequate reasons.

It is all a matter of commonsense and judgment. One does not have to know the nerve supply to one's eyelids to be able to

open one's eyes and see the light.

For one's mental health the same rule holds, but is harder to apply. A primitive approach to sex is best but unconventional. As was said at the beginning, one is enabled to throw all such decisions into a group together and have a reasonable basis for choosing—a basis very likely to be right.

Personal belief in a theory has never proved of much use in establishing it, and there have been numerous people with obsessions about nutrition. This particular one, however, does rest on the whole accepted mechanism of evolution and not on any individual idea or experiment. For this reason it should carry extra weight. The same argument could be produced in a hundred years' time for it is not founded on any prevailing fashion in medicine or on any recent discovery. It has a broader foundation as is borne out by the fact that the whole proposition has been put forward without mentioning a disease except to illustrate a type. Provided an hypothesis is not demonstrably untenable, before it is discarded, another more reasonable one should be found. The onus is really on the Consultants to justify their choice of marmalade sponge when stewed plums were available (without custard). Of course, were raw apples to appear as an alternative, it would be very gratifying; but raw cookers would show bad grace.

## STUDENT ENTRY

October, 1957

### PRE-CLINICAL

Adnitt, P. I., *Chesterfield Grammar School.*  
 Anthony, P., *Budapest University.*  
 Austin, A. J., *Cranleigh School, Surrey.*  
 Balfour, A. J., *Lancing College.*  
 Barber, S. E., *St. Catharine's School, Bramley.*  
 Bascombe, M. J., *Bournemouth School.*  
 Beard, R. M., *Dulwich College.*  
 Beecham, H. A., *Achimota School.*  
 Blake-James, R. B., *Ampleforth College, Yorkshire.*

Bloom, R. A., *Cyfarthfa Castle Grammar School.*  
 Bolton, J. C., *St. Joseph's College, Curepipe, Mauritius.*  
 Bousfield, J. D., *Cardiff High School.*  
 Brodribb, A. S., *St. Mary's School, St. Leonards-on-Sea.*  
 Burbridge, N. J., *Eastbourne College.*  
 Butler, P. W. P., *Douai School, Woolhampton.*  
 Buzady, T., *University of Pecs.*  
 Colin-Jones, D. G., *Brighton College.*  
 Collins, P., *Tapton House Grammar School, Chesterfield.*

Cotton, S. G., *Christ's Hospital, Hertford.*  
 Cupitt, A., *The Ladies College, Cheltenham.*  
 Dacie, J. E., *St. Paul's Girls' School.*  
 Davies, R. K., *Newport High School for Boys.*  
 Defrates, M. J., *Charterhouse, Surrey.*  
 Deys, C. M., *St. Paul's Girls' School.*  
 Doney, B. J., *Torquay Boys' Grammar School.*  
 Ducker, P. S., *Westonbirt School, Tetbury.*  
 Dudley, N. E., *Bedford School.*  
 Dupre, P. C., *Repton School.*  
 Edwards, H., *Queen Elizabeth Grammar School, Carmarthen.*  
 En-Nimri, S. A., *American University of Beirut.*  
 Fogarty, M. J. O., *Cardinal Vaughan School, Kensington.*  
 Fonseka, Y., *Queen's College, Taunton.*  
 Gleadle, R. I., *Merchant Taylors' School, Northwood.*  
 Glover, D. N. C., *Wellington College, Berkshire.*  
 Groves, R. J., *Beckenhams and Penge Grammar School.*  
 Hadley, D. A., *Royal Masonic School, Herts.*  
 Haig, G., *Chigwell School, Essex.*  
 Harcup, T. J. O., *Gravesend Grammar School.*  
 Hardy, J. D., *Epsom College, Surrey.*  
 Harries, M. L., *Llandovery College, Carmarthen-shire.*  
 Healey, J., *Clapham Secondary School.*  
 Howell, F. A., *Streatham Hill and Clapham High School.*  
 Hutchinson, D. B. A., *Bradfield College.*  
 Ind, J. E., *Christ's Hospital.*  
 Innes, G. R., *Ewell County Technical College.*  
 Janosi, M., *University of Budapest.*  
 Jennings, M. C., *Epsom College, Surrey.*  
 Johnson, M. S., *Westcliff High School for Girls.*  
 Joy, P. J., *Merchant Taylors' School, Northwood.*  
 Kajtar, T., *University of Budapest.*  
 Keri Nagy, J., *General Mechanical Secondary School, Budapest.*  
 Kuur, J. B. G., *Clayesmore School, Dorset.*  
 Ladd, G. H. Y., *Cardiff High School for Boys.*  
 Lageard, V. M. E., *Watford Girls' Grammar School, Herts.*  
 Latham, D., *Epsom College, Surrey.*  
 Lewis, M. G., *St. George's School, Watford.*  
 Loth, D., *Alborze Secondary School, Teheran.*  
 McGrath, K. W. G. C., *Beaumont College, Berkshire.*  
 Marsh, A. R., *Dronfield Henry Fanshawe School, Nr. Sheffield.*  
 Marsh, B. T., *Acton Technical College.*  
 Martin, R., *Latymer Upper School.*  
 Merry, R. T. G., *Rossall School, Fleetwood.*  
 Nash, A. V., *Sydenham High School.*  
 Nash, T. M. E., *Dulwich College.*  
 Nemeth, I. E., *Budapest University.*  
 Newstead, F. B., *Ely High School for Girls, Cambs.*  
 Newton, J. R., *Uppingham School, Rutland.*  
 Nouri, D., *Khadjah, Clayesmore School, Dorset.*  
 Owen, D. G., *Cathays High School for Boys, Cardiff.*  
 Pain, V. M., *High School for Girls, Tottenham.*  
 Perry, P. M., *St. Illtyd's College, Cardiff.*  
 Petri, L. A., *Pannonhalmi Gimnazium, Hungary.*  
 Phaire, T. A. J., *Finchley Catholic Grammar School.*  
 Phillips, J. D., *Tonbridge School, Kent.*  
 Poore, P. D., *Brentwood School, Essex.*

Pope, F. B., *Colgate University, Hamilton, New York.*  
 Powles, R. L., *Eltham College.*  
 Ratcliffe, R. M. H., *Malvern Girls' College, Worcestershire.*  
 Riddle, P. N., *Merchant Taylors' School, Northwood.*  
 Robertson, M. E., *Ancaster House, Bexhill.*  
 Robinson, L., *Grey Coat Hospital, S.W.1.*  
 Rolfe, M., *Cranleigh School, Surrey.*  
 Rushman, G. B., *Northampton Grammar School.*  
 Sandhu, M. S., *Duke of Gloucester School, Nairobi.*  
 Savege, P. B., *Highgate School.*  
 Scriven, P. C., *King Edward VI School, Stafford.*  
 Shearer, R. J., *Wellington College, Berkshire.*  
 Stuart, J. G., *Carlisle Technical College.*  
 Tam, Y. D., *Wah Yan College, Kowloon, Hong Kong.*  
 Thomas, A. K., *Newport High School for Boys, Mon.*  
 Thorpe, J. T., *Loughborough College.*  
 Turner, G. M., *Sydenham High School.*  
 Vartan, A. E., *St. Felix School, Southwold.*  
 Walton, J. O., *Sir William Turner's School, Redcar.*  
 Wan Ping, I. H., *St. Paul's School, Kensington.*  
 Watkin, B. C., *Tiffins School, Kingston-on-Thames.*  
 Whyatt, N. D., *Exeter School.*  
 Williams, M., *Ystalyfera Grammar School.*  
 Winter, J. M., *Tonbridge School, Kent.*  
 Zeegeen, R., *Battersea Grammar School.*

## CLINICAL

Bamford, J. K., *Gonville and Caius College, Cambridge.*  
 Clow, E., *Sidney Sussex College, Cambridge.*  
 Dean, R. S., *Clare College, Cambridge.*  
 Deraniyagala, R. S., *Trinity College, Cambridge.*  
 Durston, J. H. J., *Selwyn College, Cambridge.*  
 Fisher, J. R. H., *Queens' College, Cambridge.*  
 Garnham, J. R., *Queens' College, Cambridge.*  
 Gibson, D. F., *Magdalene College, Cambridge.*  
 Gordon, A. J., *Gonville and Caius College, Cambridge.*  
 Gray, D. J. P., *St. John's College, Cambridge.*  
 Griffiths, C. J., *Peterhouse, Cambridge.*  
 Hamilton, J. W., *Clare College, Cambridge.*  
 Holland, J. H., *Downing College, Cambridge.*  
 Lane, D. J., *Christ Church, Oxford.*  
 Lehmann, N. J. P., *Selwyn College, Cambridge.*  
 McFarlane, A., *Emmanuel College, Cambridge.*  
 Middleton, B. R., *Trinity Hall, Cambridge.*  
 Millward, J., *Keble College, Oxford.*  
 Pennington, J. H., *Christ's College, Cambridge.*  
 Recordon, J. P., *St. John's College, Cambridge.*  
 Ross, R. K., *Mackenzie, St. John's College, Cambridge.*  
 Scobie, J. D., *King's College, Cambridge.*  
 Seaton, A. T., *Trinity College, Cambridge.*  
 Sibson, D. E., *Queens' College, Cambridge.*  
 Thomas, M. G. W., *Queens' College, Cambridge.*  
 Williams, C., *Lincoln College, Oxford.*

## EXAMINATION RESULTS

### UNIVERSITY OF OXFORD

#### 2nd B.M. Examination, Long Vacation, 1957

##### General Pathology and Bacteriology

Greaves, C. W. K. H. Woolrych, M. E.

##### Forensic Medicine and Public Health

O'Sullivan, D.

##### Special and Clinical Pathology

Barnes, J. M.

Burfoot, M. F.

O'Sullivan, D.

### UNIVERSITY OF LONDON

#### General 2nd Examination for Medical Degrees, 1957

Davies, R. P.

Geach, A. R.

Watkins, A. V.

King, D. E. L.

Thomas, L. R.

### CONJOINT BOARD

#### Final Examination, October, 1957

##### Pathology

Chalstrey, L. J.

Bench, J. T.

Farren, P.

Fenn, P. J.

Farrow, L. J.

Matthews, T. S.

##### Medicine

Woolf, A. J. N.

Wright, G. R. K.

Chalstrey, L. J.

##### Surgery

Wright, G. R. K.

Chalstrey, L. J.

McKerrow, M. M.

Bower, H. P. H.

Hackett, M. E. J.

Vyle, E. A.

Alade, R. B.

##### Midwifery

Woolf, A. J. N.

Chalstrey, L. J.

McKerrow, M. M.

Bower, H. P. H.

The following candidates have successfully completed the examinations for the diplomas M.R.C.S., L.R.C.P.:—

Chalstrey, L. J.

Woolf, A. J. N.

McKerrow, M. M.

Bower, H. P. H.

Hackett, M. E. J.

Vyle, E. A.

Alade, R. B.

## SPORTS NEWS

### VIEWPOINT

AFTER a recent meeting of the Students' Union the Fives Club now enjoys official status. Their position is however rather precarious as the Fives Court is threatened with conversion into an oxygen store. The Courts at Charterhouse were destroyed during the war, and can only be rebuilt at great expense, and the Club is thus in the unique position of having a Court owned by the Hospital and threatened with closure. Apparently there is little alternative to the demolition of the present Fives Court, but the Club must be congratulated on having re-instated themselves, although under sentence.

In the winter cup competitions the Rugby Club, Hockey Club and Football Club have been drawn against St. Thomas', St. Thomas'

and Guy's Hospital respectively. If the Rugby Club overcomes this hurdle they face the London Hospital once again in the second round. The semi-final for whoever wins this should not, on paper, be difficult, but it would be rash to prophesy anything at this stage of the season.

The Rugby Club have arranged Saturday evening dances at Charterhouse "depending on the support given to the first ones." So it is up to those who wish these social events to continue to give the earlier ones their fullest support.

### SOCCER

St. Bartholomew's Hospital v. Old Parkonians. Away. October 5th. Lost 2-5.

The Hospital Soccer season opened at Gants Hill Recreation Ground, with the 1st XI match against



Old Parkonians, the Old Boys of Ilford County High School. It was a warm sunny afternoon, more suited to cricket than football. The ground was very hard, and a light bouncing ball gave trouble to St. Bart's defence. Within 10 minutes Bart's were 2 goals down, and never fully recovered, though they played with commendable enthusiasm. T. Johnson scored from a 20 yard left foot drive, and D. Prosser from a fiercely hit penalty kick. Half-time came with the score 2-3, and the final score was 2-5. Two of the Old Parkonians goals appeared off-side, and the game was much closer than the score suggests.

Bart's included 4 new players. F. Amponsah played well in defence. P. Savege and J. Kuur were forceful wingers but were well marked. B. T. Marsh, a strong forward with a good shot, showed promise.

Among the old hands, Juniper and Prosser were solid, as usual, in defence, and Pilkington was the scheming wing-half who sprayed out a series of billiard-table passes from a deep midfield position to well placed colleagues.

**Team:** J. D. Mercer; F. Amponsah, D. I. Prosser; R. Pilkington, C. P. Juniper (Capt.), P. Watkinson; P. Savege, A. Andan, T. Johnson, B. T. Marsh, J. Kuur.

#### CAMBRIDGE TOUR.

It was rather in the nature of an experiment that a tour was held so early in the season. Cambridge colleges welcome visiting teams more especially during October as they are trying out freshers and can call upon seniors who later in the year might be in more illustrious circles.

Unfortunately the experiment was rather less successful than had been anticipated. Owing to the unavailability of our freshers, the calls of "midder," and "flu, we set out on the 10th with no more than three forwards and no less than five full backs!

By a series of permutations and combinations various defenders appeared in equally various positions in the forward line. Inevitably this imposed something of a handicap on the team as a whole, for in each match as soon as the opposition discovered the position, the tide turned against us.

Socially the tour proved as great a success as ever. Our opponents were very hospitable and many friends were visited. Coffee at the "Copper Kettle" was a regular morning item on the agenda, primarily to induce consciousness in certain members and secondly to decide the afternoon's team.

No injuries were received on the field although the services of one player who had better remain anonymous were nearly lost on Thursday evening. The patient complained of "cramps or a contraction" of both feet lasting several hours. A careful history was taken and it was found that he had just returned from watching "The Prince and the Showgirl" featuring Marilyn Monroe!

**Bart's v. Trinity.** October 11th. Lost 3-2.

For the first quarter of an hour Bart's looked as if they would win fairly easily—and so they should have done. The Trinity defence was lying very square and a long through ball (on the ground) down the middle always produced a dangerous move but for some reason or other Bart's did not use this tactic often enough.

Bart's opened the scoring through a good left wing movement originating from Prosser who moved the ball to Noble. Noble took the ball to the Corner flag and centred low in front of the goal for Iregbulem to tap it in.

Play became scrappy. The forwards persisted in standing still, waiting for the ball rather than moving into the open spaces.

The backs were passing badly—putting the ball behind the forwards rather than in front.

Having discussed the rather obvious solution of the through ball at half time, one expected a revival from Bart's. However it was Trinity who came into the game and equalised within 5 minutes.

At last, a long ball down the middle! Iregbulem outstripped the centre half and with the goalkeeper at his mercy made no mistake.

Trinity then pressed even harder and the inside right equalised. 10 minutes later they went ahead and Bart's seemed finished! With a last desperate effort they produced a left wing movement and Noble went through but was brought down in the penalty area. Prosser sliced the spot kick and the goalkeeper saved easily. The final whistle was blown two minutes later.

**Team:** J. D. Mercer; F. Amponsah, D. I. Prosser; R. C. Kennedy, C. P. Juniper (Capt.), L. Carnochan; R. G. L. Smith, L. Iregbulem, T. O. Johnson, R. Pilkington, M. I. M. Noble.

**Jesus College v. Bart's.** October 12th. Lost 2-1.

The final game of the tour was played on a fine warm afternoon. From the kick-off Jesus went into the attack and forced a corner on the right which was well cleared by Prosser. Jesus returned to the attack and a hard shot by their centre-half was well held under the bar by Mercer. From his clearance Bart's went over to the offensive for the first time. Watkinson came up with the forwards but from a good position shot wide of the right post. The Bart's insides began to get a grip on the game and it was no surprise when Johnson scored an excellent goal in the righthand top corner following a dribble by Iregbulem. This was to be Bart's only moment of glory in this match. Jesus quickly regained the initiative and levelled the score just before the interval following a period of hesitation by the defence.

The second half opened with Jesus constantly attacking and the Bart's defence did well to clear several corners. The defence played as well as could be expected under the constant pressure of the Jesus attacks, and were only relieved for short periods by unconstructive forays by the Bart's forwards which too often ended in a pass to the other side. However, the defenders among whom Juniper and Prosser were always prominent held out until Mercer failed to cover a shot by the Jesus inside-right, which gave his side victory.

The Bart's touring side did not include a winger and the insides have not yet found their form so that the defence had a great deal of the burden on their shoulders. Their steadiness and covering under pressure have gradually improved and will form a good nucleus when the XI takes shape.

**Team:** J. D. Mercer; R. C. Kennedy, D. I. Prosser; M. I. M. Noble, C. P. Juniper (Capt.), P. Watkinson; F. Amponsah, L. Carnochan, L. Iregbulem, R. Pilkington, T. O. Johnson.



## RUGBY FOOTBALL

**1st XV v. U.S. Chatham** at Chatham. September 28th. Won 8-0.

The 1st XV opened their season at Chatham with a convincing win against United Services, Chatham. The Hospital had only three of last season's Cup Final pack playing, but all but two of the backs were available. Playing in the side for the first time for two years was M. Whitehouse and new to 1st XV football was C. Dale in the second row.

Play began with Bart's facing a fresh breeze. After 15 minutes' play during which the Services missed two shots at penalty goals, Bart's opened the scoring from a line-out on the Services try line. From this line-out, Whitehouse dived over for an unconverted try. Five minutes later, the Bart's forwards broke away from a line-out just inside their own half and after a short dribble, Whitehouse picked up and ran 15 yards before drawing the Services' full-back and passing to L. R. Thomas who had a 30-yard run to the line. This try was converted with an excellent kick by G. J. Halls. The rest of the first half was fairly even with the Bart's pack dominating the loose but their backs not being able to penetrate a tight Chatham defence.

The second half opened with Bart's determined to keep their lead which several times looked as if it might be increased by powerful runs on the wing by R. M. Phillips and A. B. M. McMaster. After 15 minutes, the Chatham left wing broke away with the forwards in support but efficient Bart's covering kept them out. With the Bart's forwards gaining an upper hand in the loose scrums and line-outs, their backs threw everything into attack but could not increase their score either by the forwards linking up with the three-quarters, or by short passing movements amongst the forwards. As the final whistle blew, Badley, at full back, who had inspired confidence with his fielding and kicking, just missed dropping a goal.

The outstanding feature of the game was undoubtedly L. R. Thomas' leadership of the pack which, once it had found its feet, always had the measure of their opponents. In the backs, R. R. Davies had a good game at fly-half but there was a lack of penetration in the centre which will have to be rectified if the Hospital is to make full use of its strength on the wings.

**Team:** B. W. D. Badley; R. M. Phillips (Capt.), J. C. Neely, G. J. Halls, A. B. M. McMaster; R. R. Davies, B. Richards; J. L. C. Dobson, C. J. Carr, B. Lofts, L. R. Thomas, C. C. H. Dale, R. P. Davies, W. P. Boladz, M. Whitehouse.

**1st XV v. Trojans** at Southampton. October 5th. Won 6-3.

The 1st XV playing in their second away match of the season gained a narrow win over the Trojans by 6 points to 3. With last year's captain Mackenzie still unavailable and with Moynagh at open-side wing forward, the forwards established a slight superiority in the set scrums and loose mauls but did not win the line-outs as often as in the game against United Services, Chatham. In the backs there was still a tendency to run across the field which gave wingers Phillips and McMaster little room to get past their opposite numbers.

Playing into the sun, Bart's began scrappily and after twenty minutes' play the Trojans opened the scoring with an unconverted try by their right centre three-quarter, who completed a good passing movement begun in their own half. From this time, Bart's began to play more constructive football with Carr looking well and Richards throwing out a good service from the base of the scrum. Five minutes before half-time Halls intercepted a stray pass amongst the Trojans' back division and ran through for a try which he failed to convert.

Fifteen minutes after the interval, the battle between two moderately light packs became more heated, Whitehouse scored the winning try, dribbling the ball over the line after the Trojans had heeled from a set scrum five yards from their own line. For the remainder of the game there were frequent interruptions for minor injuries and five minutes from the end the Trojans narrowly missed two fairly simple shots at penalty goals.

For the Hospital, Thomas again led the pack with vigour and he was well supported by Whitehouse and Boladz. Phillips tried hard to infuse thrust into the back division which seemed lacking in the centre, although McMaster and Davis were prominent in the attack.

On the same day the three other Hospital teams won their matches which was felt to be a good start to the season; with the formation of a fifth team the Hospital should do well this winter.

**Team:** B. W. D. Badley, R. M. Phillips (Capt.), J. C. Neely, G. J. Halls, A. B. M. McMaster; R. R. Davies, B. Richards; J. L. C. Dobson, C. J. Carr, B. Lofts; L. R. Thomas, C. C. H. Dale; P. D. Moynagh, W. P. Boladz, M. Whitehouse.

**1st XV v. Woodford.** October 12th. Won 8-6.

The 1st XV maintained their winning record by beating Woodford in an entertaining game on a sunny afternoon at Chislehurst. Although the side showed eight changes from last week due, in the main, to influenza, it was a convincing win, especially forward where we were glad to see last year's Captain, Mackenzie, playing for the first time this season. Playing their first game for the Hospital were newcomers Hamilton and Pennington in the front row of the scrum.

Against the run of the play, Woodford opened the scoring with an unconverted try in the corner by their full-back after he had fielded an ill-directed kick for touch by the Bart's defence. From this point onwards the Hospital pack took command of the set scrummages and some admirable hooking by Hamilton ensured a plentiful supply of the ball for the Bart's three-quarters. However, it was not until five minutes before half-time that the Bart's attack succeeded in eluding a very competent and effective Woodford defence. The Woodford fly-half put in a well-placed diagonal kick to his left wing but it was the Bart's captain and right wing Phillips who caught the ball travelling at top speed and in a flash was past his opposite number. Outstripping the covering forwards, he came up to the full-back. Feinting to run inwards, he passed the full-back on the outside to cross in the corner and touch down behind the posts to score one of the best tries seen at Chislehurst for some time. J. Stevens converted.

After the interval, Woodford regained the lead with a second unconverted try in the corner after five minutes' play. Thereafter, the Bart's pack took control of the loose and set scrummages with the forwards being well led by Hamilton, but it was not until ten minutes from the close that Bart's clinched the game with an excellent 40-yard penalty by Stevens.

Towards the end of the game, Phillips was seen to be limping following a tackle and our worst fears were realised later when it was found he had torn a ligament in his knee-joint. This was truly a tragic injury for him to suffer so early in the season and it seems most unlikely that he will play again before Christmas after he had demonstrated once again his superb footballing ability and pace whilst giving us a glimpse of the form which has made him probably the wing three-quarter in London club rugby.

On the brighter side, it was again pleasing to see that all four Hospital sides won for the second week in succession, which was all the more satisfying since there was a total of eighteen team and positional changes in the 1st and "A" XV's alone.

**Team:** M. Britz; R. M. Phillips, J. Stevens, J. Neely, A. B. M. McMaster; R. R. Davies, B. Richards; B. Lofts, J. Hamilton, J. Pennington; C. C. H. Dale, W. P. Boladz; J. C. Mackenzie, R. Jones, P. D. Moynagh.

## BOOK REVIEWS

**SIDELIGHTS ON THE HISTORY OF MEDICINE.** Edited by Sir Zachary Cope, London, Butterworth & Co. 45s. (35s. to Fellows of the Royal Society of Medicine).

Published to celebrate the Jubilee of the Royal Society of Medicine, this book contains a selection of the papers which have been presented to the Section of the History of Medicine during the past forty years. The twenty-three papers included are reprinted almost without alteration from the *Proceedings* of the Society, where they are readily available in most medical libraries. Although it is advantageous to have these articles in one volume, it is suggested that the price is excessive for reprinted material. Surely the Society could have found sufficient talent among its historically minded members to produce for this occasion a volume of original essays?

Several Bart's men are recognised among the contributors, including A. J. E. Cave on "Ancient Egypt and the Origin of Anatomical Science"; K. J. Franklin on "The Work of Richard Lower"; and the late G. E. Gask and Sir D'Arcy Power. In addition to their contributions, the following may be found of particular value: Charles Singer on "Medical Science in the Dark Ages"; H. W. Robinson on "Robert Hooke"; Douglas Guthrie on "The Patient: a Neglected Factor in the History of Medicine"; Sir Zachary Cope on "Surgical Lectures of 150 Years ago"; George Edwards on "Philip Syng Physick"; and E. Ashworth Underwood on "Wilhelm Röntgen". But perhaps it is unfair to mention individual items, except as samples, when all the papers have

## Trouble in the Hypothalamus

by PODALIRIUS

"Oh, dear, I feel so sleepy," said the hypothalamic cell. "It must be all this pyruvate. What's it doing here?"

"No wonder you're sleepy," said his friend the leucocyte, who had come to have a chat. "Everyone feels the same—you're just unduly sensitive. And it's not only pyruvate, it's pyruvic aldehyde too—and that's even worse."

"Yes, I know, I know," said the hypothalamic cell, who was inclined to be a little testy. "What I want someone to tell me is, what's it doing here?"

"Well, you see," said the leucocyte, "it all starts with glycogen, and then that turns into glucose, which turns into glucose-1-phosphate, which—"

"Yes, yes, I know, I know," said the hypothalamic cell again—rather rudely, for the poor leucocyte was doing his best. "Then it goes through the whole ragamadolio to pyruvate, but after that the pyruvate disappears. Or should do. Why doesn't it?"

The leucocyte was very patient, though he realised that these highly specialised cells overrated their own intelligence and importance. "It's usually oxidised; but that needs co-carboxylase."

"Well?" The hypothalamic cell was really very drowsy.

"Don't you see (you silly old neurone) that thiamine is needed for co-carboxylase; and the boss just hasn't been taking enough? Since he had that operation, his appetite hasn't picked up." But by now the hypothalamic cell was snoring.

"Oh dear," said the leucocyte, "now he's asleep, the boss's appetite will get worse than ever."

"Oh, what a wonderful morning!" carolled the hypothalamic cell. "I feel I could beat up a Bets cell! But why do I feel so good?"

"It's because the pyruvate's gone," said the leucocyte.

"Gone? Where to?"

"Oxidised! Somebody told the boss to start taking Bemax, and now he's fine."

"Bemax? What's that?"

Really, these neurones! And they think they know so much.

"Bemax," said the leucocyte, "is stabilized wheat-germ. It contains lots of thiamine, and that's how all the pyruvate got oxidised. And it contains all the other important B vitamins. It's the richest natural vitamin-protein-mineral supplement. The boss just sprinkles it on his food."

"Jolly good. I hope he keeps it up."

"So do I."

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obviously been selected for their respective merits.

In the first Chapter, written by the late Sir St. Clair Thomson in 1933, and entitled "The Present Need for the Study of the History of Medicine," he mentions a decline of interest in the subject since the nineteenth century. It still escapes official recognition in this country, although many amateur historians are actively engaged in its pursuit. The Section of the History of Medicine of the Royal Society of Medicine fosters this interest, and some of its outstanding contributions are reproduced in this volume. Unfortunately the index is wholly inadequate.

JOHN L. THORNTON.

**SURGERY: PRINCIPLES & PRACTICE** by Allen, Harkins, Moyer & Rhoads, Pitman Medical Publishing Co., Ltd., pp. 1,495, 623 illustrations, £5 10s.

This is a fascinating book which claims to give a total picture of the surgery taught and practised in America. It is edited by professors of surgery from Chicago, Washington and Pennsylvania. It is a curious mixture of basic surgical principles and advanced experimental surgery. Much of the text is good technically for the undergraduate, and provides stimulating reading for the experienced surgeon whose duty it is to train his juniors. It is an excellent book for house officers who intend to pursue a surgical career. Throughout the book reference is made to well known operations which are largely of historic interest. For instance in the section describing operative procedures on the stomach there is a comprehensive pictorial display of the various methods of resection, but only a few lines on gastrotomy. A considerable amount of space is taken up by statistics and useful bibliographies. It suffers, as do most books which have many contributors, from inconsistency, particularly in the legend for illustrations. Why it should be necessary to refer (fig. 32) to a photograph as being that of the abdominal wall of "a 50-year-old white male" and yet omit any reference to colour in most of the other illustrations is difficult to understand. The drawings are superb and many of them gain by simplicity instead of following the modern tendency towards beautiful artistic presentation which succeeds in showing the artist's ability but very little else. The time taken to produce a book of this size must necessarily leave a gap between completion of text and publication, and it is to the author's credit that there are references in the text to publications as late as 1956.

Curiously there is nothing about throat, nose and ear. The type and layout is excellent, but the index is very incomplete and has been constructed mechanically without reference to the requirements of the reader. In my search for information on the maxilla all I could find was antrumectomy, but this referred to the pyloric antrum! The book weighs 7½ lbs. (3515 G.) without dust cover—the approximate weight of a British (white) neonate, without luggage. In contrast to the many text books on surgery now available I would say that it is one of the very best and if teachers, examiners and fellowship candidates contemplate an investment I would recommend it with confidence.

D. F. E. N.

**ARTIFICIAL INSEMINATION IN THE HUMAN** by Dr. A. M. C. M. Schellen, M.D. Elsevier Publishing Co. pp. 420.

This is the most comprehensive analysis of the subject to date, and will undoubtedly become a standard reference work for the gynaecologist. Dr. Schellen has made an exhaustive survey of the history of artificial insemination, followed by an account of the many techniques and their results. But the major part of his book is devoted to the sociological, legal and moral aspect of methods by which 100,000 pregnancies so far in the U.S.A., and 6,000 annually in Great Britain are derived from donor semen, and countless other husband inseminations mechanically assisted, often for considerable fees for both practitioner and donor.

The immense sociological problem is exemplified by the process of donor selection, the varying standards of anonymity, and the risks of consanguinity arising in small communities where a few professional donors are employed.

Dr. Schellen details the legal attitude to donor insemination in the United States and the principal European countries. Clearly the advance of medical science has caught jurisprudence unprepared. In England the practitioner is still open to the risk of actions against him for conspiracy, or even adultery since the law has so far not rescinded Lord Dunedin's declaration that donor insemination is adulterous.

The attitude of the Churches to the subject is also presented in detail, and here the author has found almost universal condemnation of donor methods, and restricted acceptance of insemination from the husband.

In this epilogue Dr. Schellen finds himself quite objectively on the side of the angels.

E. A. J. ALMENT.

**AN INTRODUCTION TO ELECTROCARDIOGRAPHY** by L. Schamroth. Blackwell Scientific Publications, Oxford. Pp. 58. 12s. 6d.

This work deals with the commoner electrocardiographic abnormalities and their underlying principles. It is intended for the newcomer to the subject, and the theoretical aspects are commendably kept brief and simple. The different types of abnormal tracing are clearly described and illustrated, with conventional explanations of their formation. The author justifiably concentrates on the chest leads and the unipolar limb leads.

It is particularly important, in this type of book, to avoid giving misleading impressions; and in this the author has not entirely succeeded. For example, his statement that "the diagnosis of infarction must be based on raised S-T segments" disregards the transience of this change, which may well be absent from tracings taken a few hours after the occurrence. It is further suggested that the inverted T wave of infarction necessarily becomes upright with recovery. The exercise test for angina is shown as apparently depending on changes in V.3, AVL and AVR, whereas most physicians would rely on V.5 and V.6. In the chapter on arrhythmias, no indication is given of the leads used for illustration.

With correction of these inaccuracies, however, the book should serve to provide a working knowledge of electrocardiographic interpretation.

D. WEITZMAN.

## BOOKS RECEIVED

*Inclusion in this column does not preclude review at a later date.*

**ANAESTHETICS FOR NURSES** by Eric Godwin, John Wright & Sons Ltd. Pp. 106. 9s. 6d.

**THE DIAGNOSIS AND TREATMENT OF INFECTIONS** by D. Garaint Janus. Blackwell Scientific Publications. Pp. 234. 30s.

**INTRODUCTION TO FUNCTIONAL ANATOMY** by D. Sinclair. Blackwell Scientific Publications. Pp. 426. 42s.

**BURNS** by Simon Seviitt. Butterworth & Co., London. Pp. 364. 37s. 6d.

**HANDBOOK OF HISTOPATHOLOGICAL TECHNIQUE** by C. F. A. Culling. Butterworth & Co., London. Pp. 446. 45s.

**HISTOLOGY** by Arthur W. Ham, 3rd Edition. Pitman Medical Publishing Co. Ltd. Pp. 894. 80s.

**CHEMICAL METHODS IN CLINICAL MEDICINE** by G. A. Harrison, J. & A. Churchill Ltd., 4th Edition. Pp. xi + 667. 65s.

**MEDICAL JURISPRUDENCE & TOXICOLOGY** by John Glaister. E. & S. Livingstone Ltd., 10th Edition. Pp. xi + 720. 47s. 6d.

**THE STUDENT LIFE.** The Philosophy of Sir William Osler, Edited by Richard E. Verney. E. & S. Livingstone Ltd. Pp. xii + 214. 15s.

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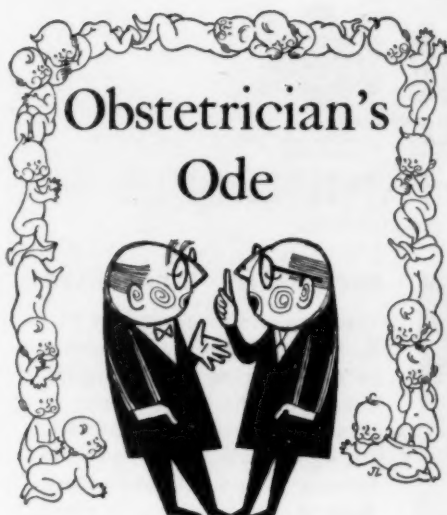
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